

II. Remarks

Reconsideration and re-examination of this application in view of the above amendments and the following remarks is herein respectfully requested.

Claims 1, 2, 7, 8, 9, 10, 11, 12, 14, 15, 17, and 20 were amended. Claims 21-23 were added. Accordingly, claims 1-23 remain pending.

Claim Rejections - 35 U.S.C. §103

Claims 1-20 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,331,063 to Kamada et al. (Kamada) in view of U.S. Patent No. 5,024,722 to Cathy, Jr.

Claims 1 and 14 include providing a layered metal substrate with an aluminum metal layer positioned between a first and second copper layer. The aluminum metal layer is part of an electrical trimetal substrate, and as such is a conductive layer used as part of the circuit trace in conjunction with the first and second copper layer.

Kamada teaches a base made of an electrically insulative material. Further, Kamada suggests various polymers or ceramics such as aluminum oxide that may be used as the base. Aluminum oxide is a ceramic not a metal and has inherently different properties from aluminum metal, including conductivity and physical structure. As such, the ceramic, aluminum oxide, cannot be substituted for the aluminum metal layer of claims 1 and 14.



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Accordingly, Kamada does not teach or suggest a layered metal substrate having a aluminum metal layer positioned between a first and second copper layer.

Claims 7 and 10 include providing a layered metal substrate with a top metal layer, a middle metal layer, and a bottom metal layer. As discussed above, the middle metal layer is conductive and used as part of the circuit trace in conjunction with the top and bottom metal layer.

Kamada teaches a substrate made of an electrically insulative material that is plated on the top and bottom with copper. Kamada teaches various polymers or ceramics that may be used as the base corresponding to the middle layer, but does not teach or suggest metal. Therefore, Kamada does not teach or suggest the present invention.

Claims 2-6, 8, 9, 11-13, and 15-20 depend, directly or indirectly, from claims 1, 7, 10, or 14 and are patentable for at least the reasons provided above in support of claims 1, 7, 10, and 14.

New Claims

Claims 21-23 have been added and are inherently patentable for the reasons mentioned above, as they depend from claims 1, 7, and 10. Further, Applicants also submit they are independently patentable based on the order of the method steps.

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Conclusion

In view of the above amendments and remarks, it is respectfully submitted that the present form of the claims are patentably distinguishable over the art of record and that this application is now in condition for allowance. Such action is respectfully requested.

Respectfully submitted,

9/7/04
Date


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